

Hitchcock's Machine Tool Blue Book

OCTOBER, 1932

TWENTY-SEVENTH YEAR

CHAMPION Tool Holders

"Built To One Standard—The Best!"

Save Expensive Tool Steel

Made of drop-forged steel, thoroughly case-hardened. Absorbs heat from cutter, permits heavier cuts, lessens breakage.




The patented, protruding under-support, equipped with unbreakable "Mac-it" set-screw, increases the bearing for the cutter 40 to 70%, with a corresponding increase in cutter economy. Write for details.

Send for our catalog describing the Champion Line of Expanding Mandrels, Vises, Clamps, Emery Wheel Dressers, Turning Tools, Boring Tools, Planer Tools, Grooving Tools, Drill Holders, Cutting-off Tools, Threading Tools, Shop Furniture, etc.

The Western Tool & Mfg. Co.
SPRINGFIELD, OHIO

PUBLISHED AT 508 So. DEARBORN ST. CHICAGO



WHAT PRICE DRILLS?

When you purchase twist drills, do you "go shopping" or place your order on the "Cost-per-Hole" Test?

What do we mean by "Cost-per-Hole" Test? Simply that, no matter what you pay for drills, their value depends entirely upon the number of holes each drill can produce, and the cost per hole drilled.

As a result, more and more drill users, and buyers, are asking, not "How much?" but "What do your drills cost per hole?"

Cle-Forge High Speed Drills are offered you on the basis of their known, everyday performance. If you are interested in this modern, scientific way of buying, ask us to send you Performance Digests Nos. 56, 58, 59, 60, 61, 72, 82 and 83, together with complete instruction forms for making a comprehensive drill test in your own shop.



TRADE MARK
200-227-107, 108

The CLEVELAND TWIST DRILL
CLEVELAND COMPANY
NEW YORK-CHICAGO-LONDON
SAN FRANCISCO

TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES

Hitchcock's Machine Tool Blue Book

Selected
Circulation

25,200
Monthly

OCTOBER, 1932

TWENTY-SEVENTH YEAR

Just Common Sense

As one of the large Chicago dailies expressed it, "Advertising is just common sense."

Your copy is your message to the trade, and your advertising medium is merely your messenger for its delivery to potential buyers of your product.

Therefore, as a common-sense investment, the logical media for your purpose are those which deliver your message to the greatest number of responsible buyers per dollar of cost.

In that respect the "Blue Book" is so far ahead of all other media in the metal-working machinery field that there is hardly any comparison. This includes not only the number of copies delivered for the cost, but the character of the recipients.

If you purchase advertising as you do other commodities, the "Blue Book" will be your first choice.

The publishers are glad to answer all inquiries for rates or any other desired information. But it's your next move. Why not write today?

Published By

Hitchcock Publishing Co.

508 S. Dearborn St.,

Chicago, Ill.

Consult the Classified Finding Index for your requirements

KRW "Bench Type" ARBOR PRESS



No. 37D

\$28.50

F.O.B. FACTORY
ARCADE, N. Y.

Shipping Weight
140 lbs.

*Write for special
circular, just off
the press, cover-
ing KRW Hy-
draulic Arbor
Presses, air and
oil operated.*

Every shop needs one of these presses to handle hundreds of jobs now done with vises and sledge hammers. They soon pay for themselves in time and labor saved.

The K R W "Bench Type" Arbor Press is oversize in every particular. The throat is extra deep, taking work up to 13 inches in diameter. The ram is $1\frac{1}{2} \times 1\frac{1}{2} \times 17$ inches. Largest arbor is $1\frac{1}{8}$ inches. The height is 22 inches. Can be conveniently mounted on end of work bench, as it takes up a space of only 8×20 inches.

K. R. WILSON

10-16 Lock Street, Buffalo, N. Y., U. S. A.

EXPORT DEPT.
126 Liberty St., New York

WEST COAST BRANCH
647 Mateo St., Los Angeles

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

For REAL SAVINGS



The
Reynolds
No. 1
Special

Use The Only Automatic Magazine-Fed Machine

That drives short
screws and those
with short bodies
and large heads

Just keep the hopper filled—
no handling of screws beyond
that—a boy or girl can oper-
ate it.

For a good many years Reynolds Automatic MAGAZINE-FED Screw Driving Machines have been driving screws of all kinds for concerns all over the country, at savings of at least 100%.

The No. 1 Special, shown above, handles screws with short bodies and large heads, magazing and driving screws from No. 4 to No. 10 up to $\frac{1}{2}$ " long, to center of a 14" circle. It will pay you in actual dollars and cents to investigate the savings the Reynolds can effect in your shop.

Many other sizes and types for almost any size screw.

Drop us a line, giving dimensions over all of your work, length and gauge of screws used. We'll submit facts and figures showing how to reduce your costs.

The Reynolds Machine Company
Dept. H. H. Massillon, Ohio



DEPENDABLE

ELCO-SCREWS

REDUCE ASSEMBLY COSTS



Specify ELCO when you want dependable screws—delivered promptly.



Modern production methods, ample warehouses, and ideal shipping facilities enable us to offer our customers this unusual combination of Quality and Service.



MACHINE SCREWS
MACHINE SCREW NUTS
WOOD SCREWS
LAG SCREWS
CAP SCREWS
PIPE PLUGS



Your inquiries will receive prompt, intelligent attention



ELCO TOOL & SCREW CORPORATION

1808 Broadway, Rockford, Ill.

"It Pays to Use Good Screws"



MARVEL

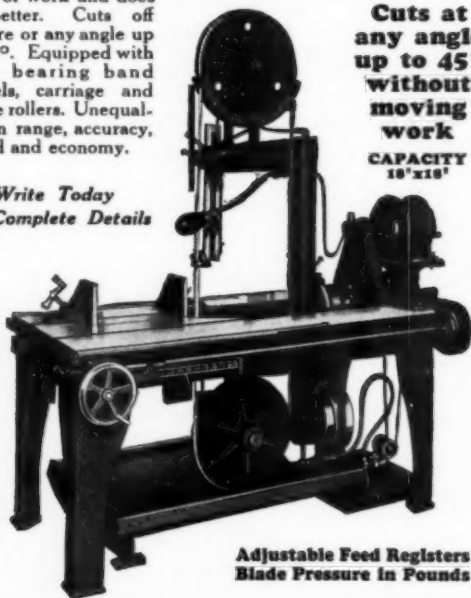
No. 8 Metal Band Saw

FULLY UNIVERSAL, simple to operate, always ready for any job—from the largest to the smallest. Cuts off bar steel, pipe, tubing, mouldings, structural shapes, etc. Does a greater variety of work and does it better. Cuts off square or any angle up to 45°. Equipped with ball bearing band wheels, carriage and guide rollers. Unequalled in range, accuracy, speed and economy.

**Cuts at
any angle
up to 45°
without
moving
work**

**CAPACITY
18"x18"**

*Write Today
for Complete Details*

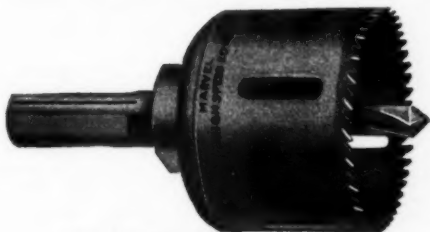


**Adjustable Feed Registers
Blade Pressure in Pounds**

ARMSTRONG - BLUM

341 N. Francisco Ave.,

MARVEL



MARVEL HOLE SAW

26 Sizes, $\frac{3}{4}$ " to $4\frac{1}{8}$ "

Cuts clean, round holes through steel, wood, cast iron, brass, copper, bakelite, slate, marble, etc., to a depth of $1\frac{1}{8}$ in. The teeth are HIGH SPEED STEEL, welded to a tough, special alloy UNBREAKABLE BODY. They stand up in use in portable electric drills and drill presses. YOU WANT THE BEST. Write us for details, price, etc.



MARVEL HACK SAW BLADES

MARVEL High Speed Edge Hack Saw Blades are guaranteed not to break in two in any machine—not even by accident. Marvel blades with the genuine high speed steel cutting edge electrically welded to a tough special alloy back outlast ordinary blades from six to ten times and with faster, cleaner cuts, and fewer blade changes.

Send for Descriptive Circulars

MANUFACTURING CO.
CHICAGO, ILLINOIS

CONVENIENCE AND ECONOMY ALONG WITH PRESTIGE ...



"I'm stopping at the Gibson." That means something in Cincinnati. And the central Fountain Square location of this famous hostelry means shorter distances by automobile or taxi . . . you'll save money! Just across the street from city bus terminal and Dixie Terminal, the gateway to Kentucky . . . closer to most street car lines than any other hotel.

1,000 rooms, each with bath;
70% of all rooms at \$2.50, \$3,
\$3.50 and \$4 . . . Garage.

C. C. Schiffeler - Managing Director

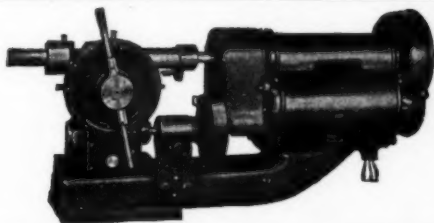


The Greater
HOTEL GIBSON
CINCINNATI

THE VALUE OF A TOOL DEPENDS ON WHAT IT WILL PRODUCE.

The Cost of Finished Work is the
Real Consideration.

HOW GOOD——HOW FAST?



MEN

who expect Quality work expect to pay a
Quality price, rather than to think *only*
in terms of "how much."

ARE YOU INTERESTED

in **GOOD DRILLING—
GOOD TAPPING ?**

We have Tapping Attachments as well as Built-in Tappers
and a full line of Motor Units and Drilling Machines.

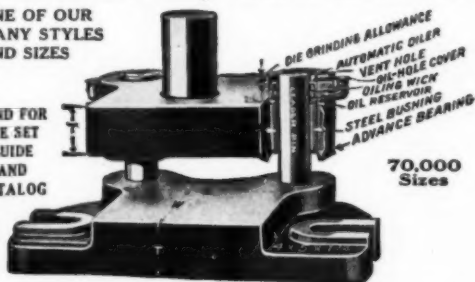
ALL ARE QUALITY TOOLS.

THE AVEY DRILLING MACHINE CO.
CINCINNATI

Automatically Oiled Die Sets

ONE OF OUR
MANY STYLES
AND SIZES

SEND FOR
DIE SET
GUIDE
AND
CATALOG



E. A. BAUMBACH MFG. CO.

GENERAL OFFICE AND WORKS

1810 South Kilbourn Ave., CHICAGO, ILLINOIS

Sales and Engineering Offices—Principal Cities U. S. A. and Canada



Punch MORE Holes with T. H. L. PUNCHES

T. H. L. Punches will produce more than the average number of holes, for they are made of the highest grade, dependable tool steel and are hardened and tempered—*right*. Our experience of nearly 40 years in making of punches assures you satisfactory, continuous and profitable production.

A Trial Order

will convince you. We carry large stocks of regular sizes for immediate delivery—special sizes quickly made.

Write for a copy of our Catalog

T. H. Lewthwaite Machine Co.

311 East 47th St., (Est. 1890) New York City

SPEED

SPOT WELDERS

$\frac{1}{2}$ to 50 K. V. A.

Made foot-operated
and variable speed
**AUTOMATIC MOTOR
DRIVE**, no change
gears, for welding
from .0005 to $\frac{5}{8}$ "
combined thickness.

Welders for Fine
Work Priced As
Low As

\$55.00

Submit Your Problems



MANUAL



AUTOMATIC

EISLER ELECTRIC

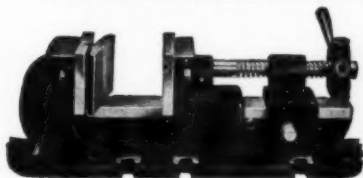
763 So. 13th Street.

NEWARK, N. J.

Distributor and Dealer Connections Desired

Gem Drill Press Vise

With Automatic, Quick-Acting, Powerful Grip



*Holds
Irregular
Pieces
Firmly*

The jaws are made of steel, hardened and ground, with horizontal and vertical "V" grooves. The independent swivel jaw holds taper and irregular work with a bull-dog grip. Its quick action, powerful grip and adaptability make it *the most efficient vise on the market*. Made in three sizes. Write today for folder, picturing its use in drilling and milling operations.

J. E. Martin Tool & Die Works, 528 W. State St.
Springfield, O.

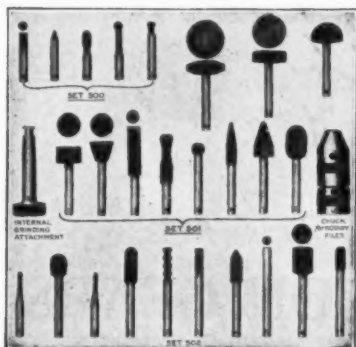
It Will Profit You

YOU CANNOT GO WRONG if you select your purchases of new machinery and equipment from the reliable and progressive manufacturers represented in this publication, who by their advertising show they intend to stay in business and think enough of their products to publicly call them to your attention. Those who are advertising in this issue are as follows:

Armstrong-Blum Manufacturing Co.
Armstrong Bros. Tool Co.
Atlas Press Co.
Avey Drilling Machine Co.
E. A. Baumbach Mfg. Co.
Boston Gear Works Sales Co.
Burke Machine Tool Co.
Clements Manufacturing Co.
Cleveland Twist Drill Co.
Defiance Machine Works
Eisler Electric Corporation
Elco Tool & Screw Corporation
Foote-Burt Company
Graham Manufacturing Co.
Grant Mfg. & Machine Co.
Illinois Testing Laboratories, Inc.
T. H. Lewthwaite Machine Co.
Luma Electric Equipment Co.
J. E. Martin Tool & Die Works
Procunier Safety Chuck Co.
Reynolds Machine Co.
Schwerdtle Stamp Co.
N. A. Strand & Co.
Sun Oil Company
Sunstrand Machine Tool Co.
Thompson Grinder Co.
Walls Sales Corporation
The Walton Co.
Western Tool & Mfg. Co.
Whitney Metal Tool Co.
K. R. Wilson

Get in touch with these progressive manufacturers when in need of **DEPENDABLE PRODUCTS.**

1905 *Strand* 1932 ROTARY FILES



HIGH SPEED
STEEL

HAND CUT

ROTARY FILES
USED WITH
STRAND
FLEXIBLE
SHAFT
MACHINES
ARE GIVING
WONDERFUL
RESULTS

N. A. Strand & Co.
5001-09
No. Lincoln Street
CHICAGO



ARMSTRONG

TRADE MARK REG. IN U.S. PAT. OFFICE

Drop-Forged

Lathe Dogs "C" Clamps



These are lifetime tools that do not spread or give—that can be depended on not to slip. Drop forged from special open hearth steel, they have extraordinary stiffness, toughness . . . strength. Screws have double wear threads, are of special steels hardened at the point. They will not "upset". Hubs of these Lathe Dogs are over-size, large enough to permit re-tapping, to give double life.

Sizes and Types for every machine shop and tool room use, each an ARMSTRONG TOOL—the finest that can be made.

Write for Catalog B-27

ARMSTRONG BROS. TOOL CO.

"The Tool Holder People"

308 N. Francisco Ave., CHICAGO, U. S. A.

STANDARDIZATION PAYS

Universal Joints

Steel and Bronze



Send for Circular giving specifications
and prices on complete line

Boston Gear Works Sales Co.
North Quincy, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

BOSTON GEARS



**This PORTABLE
ELECTRIC BLOWER** delivers DRY air, free from oil, at high velocity, yet low pressure. It safely, quickly, and efficiently cleans motors, generators, converters, shafting, overhead piping, etc.

Instantly convertible for suction-cleaning stocks, bins, auto interiors, furniture, overhead pipes, shafts, line shafting, etc., or for spraying insecticides, deodorants, paints, lacquers, etc.

Reduces fire risk and danger of "shorts" and "burnouts."

No installation. Attach to any light socket. Less than 2¢ an hour to run. Ball bearings—no oiling. 4 models.

Used by over 20,000 concerns. Fully guaranteed by 20 year old company, originators and largest manufacturers of portable electric blowers.

Try it 10 days

Then pay for it, or return it at our expense.

CLEMENTS MFG. CO., 626 Clements Bldg.
6650 So. Narragansett Ave., Chicago, Ill.



Ball-bearing
Clements
Cadillac

**10 day
FREE
TRIAL**

To Industrial Plants

For the mutual benefit of yourselves and our advertisers, we want to be sure that the Blue Book goes, without cost, to those in your plant who can use it to good advantage.

Quite a number of you, particularly among automobile manufacturers, have sent us lists of the prominent men in your organizations who are most closely identified with the planning of your improvements and the selection or purchase of your machinery.

If you have not done this, you are earnestly requested to send us such a list of names, so that we may mail the Blue Book regularly every month to those of your own selection, without cost or obligation of any kind whatsoever. Simply tear out this page, write the names on the reverse side, and mail it to the publisher.

Our only object is to make the Blue Book the best buying and selling medium on earth between manufacturers of machine tools and shop equipment and plants such as yours.

(See next page)

HITCHCOCK PUBLISHING CO.
508 S. Dearborn St., Chicago, Ill.

Please send your Machine Tool Blue Book, without cost, to the following members of our organization, who have to do with planning the equipment of our machine shops and the selection or purchase of our machine tools and other shop requirements:

(Give both names and titles)

[illegible]

It is understood that you are to use the above names as a mailing list for your Machine Tool Blue Book only, and that they will not be used for any other purpose.

Name _____

Street No. _____

City _____ State _____

Improved Thompson Universal Grinder

Self-contained and motor driven, this standard Grinder combines efficient means for the rapid and accurate production of every grinding operation required in a machine shop.

All standard machines equipped with auxiliary independent coarse cross feed for surface grinding.

Capacity 12"x36"

**The Thompson
Grinder Co.**

1534 West Main St.,
SPRINGFIELD, OHIO



BURKE

Accurate Holes up to $\frac{3}{8}$ "
—speedily drilled!



Here's a handy drill for the rapid and accurate production of drilled holes up to $\frac{3}{8}$ ". Spindle speeds range from 1150 to 2600 R. P. M., with power supplied by a specially built motor universally serviced. Special steel spindle fitted with Almond Chuck, counter-balanced through pinion.

A finely made and sturdy machine that is priced within extremely reasonable limits. Every shop can use it.

All details on request.

The Burke Machine Tool Co., 297 E. 16th St.,
Conneaut, Ohio

MARKING DEVICES

RUBBER STAMPS



STEEL STAMPS



BURNING BRANDS



ETCHED METAL
NAME PLATES



BRASS
LABELS



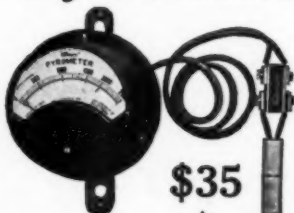
THE SCHWERDTLE STAMP CO.
BRIDGEPORT, CONN.

"ALNOR" Pyrometers

for the
Hardening
Furnace

MODEL 223

Inexpensive, yet accurate and durable, the ALNOR Pyrometer is used by large and small shops everywhere for heat-treating work. Because of its low first cost and compact size it is also very popular for soft metal melting, galvanizing, die casting, japanning, enameling, measuring flue gas temperatures and many other purposes.



\$35

As
Illustrated

Write for descriptive folder

Illinois Testing Laboratories, Inc.
150 W. Austin Ave., Chicago, Ill.

Have you seen the—
ATLAS BENCH LATHE?

Many *have* seen it, and *are* using it.

Shops everywhere are cutting their overhead by using the ATLAS for small work (9" swing, 18" between centers).

Motor Drive——Self-Contained

Amazing low price, \$79.00

Write for free circular

ATLAS PRESS COMPANY, KALAMAZOO, MICH.

Grant NOISELESS SPINNING Riveter



One rivet per second.
Heads highly polished.
No hammer or tool marks.
The work is always uniform.
As tight or loose as desired.
Works in hard-to-get-at places.
It's easily operated by cheap help.
A boy or girl can manipulate it.
And—it's noiseless in operation.

Write today for Catalog, showing several styles. Also send us samples of your work for riveting; we will return them with close estimate of cost.

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

NOW IS THE TIME TO BUY

By George H. Corliss

*Advertising and Sales Promotion Manager J. A. Fay & Egan Co.
Writer on Economics, Authority on Merchandising.*

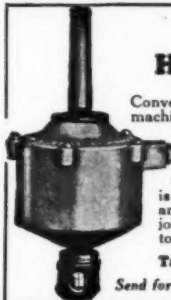
If attractive price quotations, based on past depressed conditions, have during the last six months been made to you on machines, equipment and supplies that you now have under consideration, ***now is the time to place your orders*** before all outstanding quotations are withdrawn and new and higher price quotations issued.

If you are a manufacturer or a supplier of goods to the trade and have price quotations outstanding for jobs, products or merchandise it will be good business on your part to immediately notify your trade that you cannot possibly protect them very much longer on the prices quoted, provided you made temporary concessions in your quotations based on conditions prevailing four or six months ago.

The new feeling of hope and confidence rapidly taking the place of former doubt, gloom and apprehension ***is the signal to get orders in now*** before quoted prices show a sharp advance.

Now is the time to buy and now is the time to notify your own trade that all outstanding price quotations may soon be withdrawn without notice.

LOW-COST TAPPING!



The Proconier High-Speed Tapper

Converts your drill press into a sensitive tapping machine at the cost of a few dollars.

Over 2000 R. P. M.

Our brand new friction tapper (illustrated) is reversible, has a "double cone" cork clutch, and can be driven over 2000 R. P. M. on many jobs. We also manufacture positive drive tools for slower work.

Take advantage of our free trial offer.

Send for circular giving complete information and prices.

PROCUNIER SAFETY CHUCK CO.

14 S. Clinton St.,

:-1

-1-

Chicago, Ill.

Angle Iron Mitre Notcher

No. 60



Angle Iron Bender

No. 61



Ball Bearing.

This notcher and bender has a capacity of $3\frac{1}{2} \times 3\frac{1}{2} \times \frac{3}{8}$ angle.

*Write for prices and
Catalog on Entire Line.*

WHITNEY METAL TOOL COMPANY

95 FORBES ST.,

ROCKFORD, ILL.

Memorandum Of Machinery or Equipment Wanted

Name

Address

We are in market for

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Mail to Hitchcock Publishing Co., 508 S. Dearborn St., Chicago, Ill.,
or to any advertiser

Why Waste Time On Broken Taps ?



Every minute spent by your high-priced mechanics in digging out broken taps is a dead loss. When a tap breaks it should be *removed quickly with*

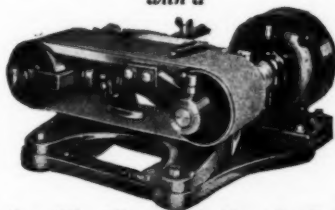
The Walton Tap Extractor

This handy tool has steel fingers which back out the tap *without injuring the threads*. It will save you many hours in the course of a year—paying for itself over and over again. Made in three and four-flute styles.

*Try One in YOUR SHOP—
Sent on 60-day Trial Basis*

The Walton Company
302 Pearl St., Hartford, Conn.

Abolish Expensive Hand Finishing *with a*



Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

WALLS SALES CORP., 96 Warren Street
NEW YORK

Analysis of Circulation of **HITCHCOCK'S MACHINE TOOL BLUE BOOK**

By Dun and Bradstreet Ratings

(Corrected to December 1st, 1931)

To domestic concerns, and superintendents, works managers, production engineers, master-mechanics, etc., in such concerns rated at—

Exceeding \$1,000,000.....	2,181
\$500,000 to \$1,000,000.....	1,603
\$300,000 to \$ 500,000.....	1,529
\$200,000 to \$ 300,000.....	1,367
\$125,000 to \$ 200,000.....	1,784
\$ 75,000 to \$ 125,000.....	1,985
\$ 50,000 to \$ 75,000.....	1,417
\$ 20,000 to \$ 50,000.....	2,992
\$ 10,000 to \$ 20,000.....	1,983
\$ 5,000 to \$ 10,000.....	1,625

TOTAL to Private Concerns of over \$5,000... 18,466

Steam and Street Railway Mechanical and Purchasing Officials, Government and Municipal Plants, Technical Schools, Electric Power Plants, Selected Foreign Importers and Users, Etc.,.....	3,411
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TOTAL to Buyers of Known Responsibility... 21,877

*Concerns quoted in Dun or Bradstreet, but without Capital Rating..... 2,116

Concerns not yet in either Dun or Bradstreet, which includes new industries..... 961

Concerns rated \$3,000 to \$5,000..... 465

Miscellaneous 195

TOTAL CIRCULATION 25,614

*This group includes a considerable number of large concerns, and some small ones of high credit, whose capital rating is not given by either of the commercial agencies.

For Light and Heavy Etching

With 24 Stages of Control.

The LUMA Master Etchtool fulfills every marking requirement that can be done by an electric Etching outfit.

A Production Tool with as many as 24 different stages or varieties of control for regulating the depth of marking, this tool can be used for extra light marking of machinest scales, micrometers and fine tools or can be used for *extra heavy and deep* marking of rough and unfinished iron, cast iron, forgings, steel plates, etc.

Send for circular giving complete data and details of this modern instrument.



Built rugged for continuous work on the production line.

LUMA ELECTRIC EQUIPMENT CO.
DEPT. H.—Main P. O. Box No. 132—TOLEDO, OHIO

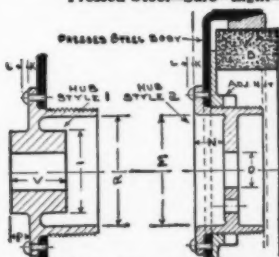
GRINDER

CHUCKS

Hold Solid Abrasive Rings.

Nine Sizes, 10" to 30" diameter

Pressed Steel—Safe—Light—Simple—4000 in Use



Hubs for Disc, Face, Floor, Edge and Special Grinders

Send for Circulars

THE GRAHAM MFG. CO., 70 Willard Ave.
PROVIDENCE, R. I.

Action, Accuracy and Economy

THE production machine tool of tomorrow will be purchased, not on design and appearance, but on results obtained, and the yield on the capital invested.

But in order that these machine tools may function to the full extent of their rated capacity, it is necessary that they have simplified and effective tooling, the application of the proper speeds and feeds, and a cutting lubricant that will insure the production of accurate, quality finished parts with long runs between tool grinds.

Sunoco will aid your machines in maintaining their rated efficiency. In many operations the production of finished parts on your lathes, drill presses, millers, and other machine tools will show an increase. The adaptability of Sunoco to faster machine operation encourages the use of higher spindle speeds.

We welcome an opportunity to demonstrate the merits of Sunoco where it should be demonstrated—in your own plant, under your own operating conditions.

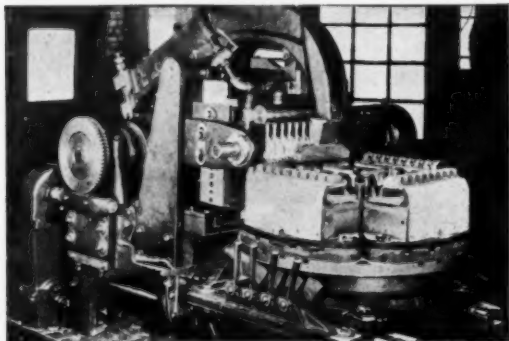
SUN OIL COMPANY,
Philadelphia, U. S. A.

SUN OIL COMPANY, Ltd.
Montreal, Canada.

*Offices and Warehouses
in 100 Cities*

SUNOCO
EMULSIFYING CUTTING FLUID

Courtesy of The Producto Machine Company, Bridgeport, Conn.



OPERATION: MILLING VEE GROOVE IN INTER-
CHANGEABLE CIRCULAR SAW TEETH.

MACHINE: PRODUCTO NO. 50.

MATERIAL: TOOL STEEL FORGING.

WIDTH OF GROOVE: 3-16 INCH.

LENGTH OF GROOVE: 1½ INCH.

CUTTER: 2½ INCH. 192 R. P. M.

FEED: .030 INCH.

LUBRICANT: 1 PART SUNOCO TO 20 PARTS WATER.

SUNOCO
CUTTING OIL

Made by **SUN OIL CO.**
producers of
BLUE SUNOCO
MOTOR FUEL

Classified Finding Index

Angle Plates

Sheldon Machine Co., Railway Exchange Bldg., Chicago, Ill.

Arbor Presses

Atlas Press Co., Kalamazoo, Mich.
Sheldon Machine Co., Railway Exchange Bldg., Chicago, Ill.
Wilson, K. R., Buffalo, N. Y.

Balancing Ways

Sundstrand Machine Tool Co., Rockford, Ill.

Ball Bearings

Boston Gear Works Sales Co., Norfolk Downs, Mass.

Band Saw Machines, for Metal

Armstrong-Blum Mfg. Co., 241 N. Francisco Av., Chicago

Bending Machines, Hand and Power

Armstrong-Blum Mfg. Co., 241 N. Francisco Av., Chicago
Excelsior Tool & Mch. Co., E. St. Louis, Ill.
Lowthwaite Mch. Co., T.H. 311 E. 47th., N. Y.

Blowers, Electric

Clements Mfg. Co., 6650 Naragansett Ave., Chicago, Ill.

Bolt and Nut Machinery

Foots-Burt Co., Cleveland, O.

Boring, Drilling & Milling Machines

Defiance Machine Co., Defiance, O.

Boring Machines, Horizontal

Avey Drilling Machine Co., Cincinnati

Brakes, Hand Truck

Fisher Equip., 1291 Caxton Bldg., Chicago

Brands, Burning

Schwerdtle Stamp Co., Bridgeport, Conn.

Cap Screws, Hexagon Head

Elco Tool & Screw Corp., Rockford, Ill.

Centering Machines

Sundstrand Machine Tool Co., Rockford, Ill.

Centers, Frictionless Live

Precision Gauge & Tool Co., Detroit, Mich.

Centers, Special

Precision Gauge & Tool Co., Detroit, Mich.

Chain Drives

Boston Gear Works Sales Co., Norfolk Downs, Mass.
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Chains, Silent and Roller

Cullman Wheel Co., 1359 Altgeld St., Chgo.

Chamfering Machines, Automatic

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Chucks, Automatic

Procurer Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Collet

Procurer Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Drill and Tap

Procurer Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Quick Change

Glenzer Co., J. G., Detroit, Mich.
Procurer Safety Chuck Co., 14 So. Clinton St., Chicago

Chucks, Ring Wheel Grinder

Graham Manufacturing Co., Providence, R. I.

Clutches, Friction

Conway Clutch Co., Cincinnati, O.

Cold Saws

Burke Machine Tool Co., Connecticut, Ohio

Collets

Wade Tool Co., Waltham, Mass.

Contract Work Wanted

Burke Machine Tool Co., Connecticut, O.

Counterbores and Spot Facers

Glenzer Co., J. C., Detroit, Mich.

Couplings, Friction Clutch

Conway Clutch Co., Cincinnati, O.

Demagnetizers

Luma Electric Equipment Co., Toledo, Ohio

Dies, Blank and Forming

American Tool Works, Inc., Hartford, Conn.
Elco Tool & Screw Corp., Rockford, Ill.
Wade Tool Co., Waltham, Mass.

Classified Finding Index

Die Sets

Baumbeck Mfg. Co., E. A., 1812 So. Kildebourn Ave., Chicago

Die Threaders, Automatic

Townsend Mfg. Co., H. P., Hartford, Conn.

Drill Fixtures

Siewek Tool Co., Detroit, Mich.

Drill Jigs

Siewek Tool Co., Detroit, Mich.

Drill Heads, Multiple

Siewek Tool Co., Detroit, Mich.

Drilling Attachments, High Speed

Graham Manufacturing Co., Providence, R.I.

Drilling Machines, Automatic

Townsend Mfg. Co., H. P., Hartford, Conn.

Drilling Machines, Bench

Avey Drilling Machine Co., Cincinnati

Drilling Machines, Multiple Spindle

Avey Drilling Machine Co., Cincinnati
Foots-Burt Co., Cleveland, O.

Drilling Machines, Portable Electric

Strand Co., N. A., 5001 N. Lincoln St., Chicago

Drilling Machines, Sensitive

Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Cincinnati, Oh
Foots-Burt Co., Cleveland, O.

Drilling Machines, Vertical

Avey Drilling Machine Co., Cincinnati
Foots-Burt Co., Cleveland, O.

Drills, Twist

Cleveland Twist Drill Co., Cleveland, Ohio.

Drive Screws

Eleo Tool & Screw Corp., Rockford, Ill.

Drives, Lathe

Culman Wheel Co., 1359 Altgeld Street, Chicago, Ill.

Electric Blowers

Clements Mfg. Co., 6650 Maragansett Ave., Chicago, Ill.

Electrical Instruments

Illinois Testing Laboratories, Inc., 115 W. Austin Ave., Chicago

Emery Wheel Dressers and Cutters

Western Tool & Mfg. Co., Springfield, O.

Engravers, Mechanical and Hand

Schwardtke Stamp Co., Bridgeport, Conn.

Etching Machines, Electric

Luma Electric Equipment Co., Toledo, Ohio

Experimental Work

American Tool Works, Inc., Hartford, Conn.

Filing Machines

Wardwell Mfg. Co., Cleveland, O.

Fixture Locks

Siewek Tool Co., Detroit, Mich.

Furniture, Machine Shop

Western Tool & Mfg. Co., Springfield, O.

Gages, Pin, Plug, Ring and Snap

American Tool Works, Inc., Hartford, Conn.

Gears

Boston Gear Works Sales Company, Norfolk Downs, Mass.

Grinding Machines, Belt

Walls Sales Corp., 96 Warren St., New York

Grinding Machines, Cutter, Reamer and Tool

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Internal

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Portable Electric

Strand Co., N. A., 5001 N. Lincoln St., Chicago

Grinding Machines, Pulley Finishing

Graham Manufacturing Co., Providence, R.I.

Classified Finding Index

Grinding Machines, Ring Wheel

Graham Manufacturing Co., Providence, R. I.

Grinding Machines, Surface

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Universal

Thompson Grinder Co., Springfield, Ohio

Hack Saw Blades

Armstrong-Bloom Mfg. Co., 341 N. Francisco Ave., Chicago

Hack Saw Machines

Armstrong-Bloom Mfg. Co., 341 N. Francisco Ave., Chicago

Jigs and Fixtures

American Tool Works, Inc., Hartford, Conn.
Eico Tool & Screw Corp., Rockford, Ill.
Siewak Tool Co., Detroit, Mich.

Knurls and Holders, for Turrets

Graham Manufacturing Co., Providence, R. I.

Lag Screws

Eico Tool & Screw Corp., Rockford,

Lathe Drives

Cullman Wheel Co., 1359 Altgeld St., Chgo.

Lathes, Automatic

Townsend Mfg. Co., H. P., Hartford, Conn.

Lathes, Manufacturing

Sundstrand Machine Tool Co., Rockford, Ill.

Lathes, Precision

Wade Tool Co., Waltham, Mass.

Mandrels, Expanding

Western Tool & Mfg. Co., Springfield, O.

Machine Screws

Eico Tool & Screw Corp., Rockford, Ill.

Milling Attachments

Burke Machine Tool Co., Connecticut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Bench

Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand

Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Manufacturing

Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Plain

Burke Machine Tool Co., Connecticut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Universal

Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Vertical

Kearney & Trecker Corp., Milwaukee, Wis.

Name Plates, Etched and Stamped

Schwerdtle Stamp Co., Bridgeport, Conn.

Nuts, Machine Screw

Eico Tool & Screw Corp., Rockford, Ill.

Oil, Cutting

Sun Oil Co., Philadelphia, Pa.

Oil, Lubricating

Sun Oil Co., Philadelphia, Pa.

Pins, Leader And Dowel

Deambach Mfg. Co., E. A., 1812 So. Kilmourne Ave., Chicago

Pipe Plugs, Square Head and Slotted

Eico Tool & Screw Corp., Rockford, Ill.

Polishing and Buffing Machines

Excelsior Tool & Mch. Co., E. St. Louis, Ill.

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
Sheldon Machine Co., Railway Exchange Bldg., Chicago, Ill.
Wilson, R. K., Buffalo, N. Y.

Presses, Punch

Lowthwaite Mch. Co., T. B., 811 E. 47th, N. Y.

Reel Machinery

Avery Drilling Machine Co., Cincinnati

Classified Finding Index

Profiling Machines

Wade Tool Co., Waltham, Mass.

Punch Press Feeds

Wittek Mfg. Co., 4309 W. 24th Place, Chgo.

Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago
Lewthwaite Mch. Co., T. H., 311 E. 47th,
New York
Whitney Metal Tool Co., Rockford, Ill.

Punches and Dies

Lewthwaite Mch. Co., T. H., 311 E. 47th., N. Y.

Punches and Shears

Excelsior Tool & Mch. Co., E. St. Louis, Ill.

Pyrometers

Illinois Testing Laboratories, Inc., 180 W.
Austin Ave., Chicago

Reamers, Adjustable

Cleveland Twist Drill Co., Cleveland, Ohio.

Riveters, Multiple Spindle

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Riveters, Pneumatic

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.
Townsend Mfg. Co., H. P., Hartford, Conn.

Roll Cutters

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago
Lewthwaite Mch. Co., T. H., 311 E. 47th., N. Y.

Roll Forming Machines

McKinney Tool & Mfg. Co., Cleveland, Ohio

Saw Sharpening Machines

Wardwell Mfg. Co., Cleveland, O.

Screw Driving Machines, Automatic

Raynolds Machine Co., Mansfield, Ohio

Screw Machines, Automatic

Automatic Machine and Engineering Co.,
Inc., Detroit, Mich.
Townsend Mfg. Co., H. P., Hartford, Conn.

Screws, Cap, Drive, Lag, Mch. & Wood

Elico Tool & Screw Corp., Rockford, Ill.

Shafts, Flexible

Strand Co., N. A., 5001 N. Lincoln St., Chgo.

Shaping Machines

Osborne & Sexton Mch. Co., Columbus, O.

Shears, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago
Lewthwaite Machine Co., T. H., 311 E. 47th
St., New York
Whitney Metal Tool Co., Rockford, Ill.

Special Tools and Machinery

American Tool Works, Inc., Hartford, Conn.
Wade Tool Co., Waltham, Mass.

Speed Reducers, Worm, Spur and Herringbone

Boston Gear Works Sales Co., Norfolk
Downs, Mass.
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Spot Welding Machines, Speed.

Esler Electric Corporation, Newark, N. J.

Sprockets

Cullman Wheel Co., 1359 Altgeld St., Chgo.

Stamps, Steel and Rubber

Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board

Schwerdtle Stamp Co., Bridgeport, Conn.

Straightening Machines

Whitney Metal Tool Co., Rockford, Ill.

Stud Setters

Proconier Safety Chuck Co., 14 S. Clinton
St., Chicago

Tap Extractors

Walton Co., Hartford, Conn.

Tap Holders

Proconier Safety Chuck Co., 14 S. Clinton
St., Chicago

Classified Finding Index

Tapping Machines and Attachments

Avery Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Cincinnati, Ohio
Whitney Metal Tool Co., Rockford, Ill.

Threading Machines, Automatic, Stud

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tools, Boring

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Lathe and Planer

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tube Flanging Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Universal Joints

American Tool Works, Inc., Hartford, Conn.
Boston Gear Works Sales Company, Norfolk
Dorset, Mass.

Used and Rebuilt Machinery

Akron Equipment Co., Akron, Ohio
Atlas Equipment Co., 1132 W. Lake Street,
Chicago, Ill.
Automatic Machine & Engineering Co., Inc.,
Detroit, Mich.
Bennett Machinery Co., 80 Church St.,
New York, N. Y.
Blower Mfg. Co., J., Springfield, Ill.
Bernstein & Co., Geo. M., 221 N. Elizabeth
St., Chicago, Ill.
Bowman Co., Geo. H., Cleveland, Ohio.
Bradley Machinery Co., Detroit, Mich.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Carroll & Son, Wm., Cincinnati, Ohio
Chicago Machine Works, 558 W. Washington
Bldg., Chicago, Ill.
Cincinnati Mch. & Supply Co., Cincinnati, O.
Dunham Steel Products Co., 74th and
Ashland Ave., Chicago
Eastern Machinery Co., Cincinnati, O.
Elyria Belting & Mch. Co., Elyria, Ohio.
Hawley Machinery Co., E. L., 725 Ness St.,
Chicago, Ill.
Foster Machinery Co., Cleveland, Ohio.
Gosse, James, J., Boston, Mass.
Hirman & Sons, Joseph, Philadelphia, Pa.
Indianapolis Machinery & Supply Co.,
Indianapolis, Ind.
Interstate Mch. Co., 130 S. Clinton, Chgo.
Iroquois Machinery Co., Buffalo, N. Y.
Johnson & Sons Machinery Co., Wm. C.,
St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, Ohio

Used and Rebuilt Machinery—Cont.

Kinsley Co., E. A., Cincinnati, Ohio
McDonald Machinery Co., St. Louis
Marr-Galbreath Mch. Co., Pittsburgh, Pa.
Midwest Equipment Co., 625 W. Lake St.,
Chicago, Ill.
Mid-West Machine Tool & Supply Company,
Davenport, Iowa
Miles Machinery Co., Saginaw, W. S., Mich.
Norton-Broadway Mch. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Mch. Co., Columbus, O.
Reeve-Fritts Co., 558 W. Washington, Chgo.
Russell Machine Co., Pittsburgh, Pa.
Scott-Hausbach Mch. Co., 6637 W. 20th St.,
Chicago
Segal Machinery Co., 300 W. Lake Street,
Chicago, Ill.
Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
Simmons Machine Tool Corp., Albany, N. Y.
Strafer Machinery Co., Jersey City, N. J.
Strong, Carlisle & Hammond Co., Cleveland,
Ohio
Tamps Bros. Motor Co., Brooklyn, N. Y.
United Machinery & Supply Co., St. Louis,
Mo.
Wertman Mch. Co., M. A., Cleveland, O.
West Penn Machinery Co., Pittsburgh, Pa.
White Mch. Co., A. D., 108 N. Jefferson
St., Chicago
Wilson Mechanical Instrument Co., New
York City.
Wigglesworth Mch. Co., Cambridge, Mass.

Vises, Drilling Machine

Armstrong-Hum Mfg. Co., 341 N. Francisco
Av., Chicago
Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago
Graham Manufacturing Co., Providence, R. I.
Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'

Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine

Graham Manufacturing Co., Providence, R. I.

Vises, Shaper

Graham Manufacturing Co., Providence, R. I.

Welding Machines, Electric Spot

Eisler Electric Corporation, Newark, N. J.

Welding Machines, Resistance

Eisler Electric Corporation, Newark, N. J.

Wood Screws

Eico Tool & Screw Corp., Rockford, Ill.

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus \$3.00 for name and address. Minimum charge, \$6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants in either new or used machinery and the publisher will pass them along to the advertisers.

FOR SALE BY

Geo. M. Bernstein & Co., - 221 No. Elizabeth St., Chicago, Ill.

Gear hobber, No. 3 B-C.....\$250.	Miller, No. 3 Becker, vertical.. 165.
Hammer, No. 2, rot. Grant, $\frac{3}{4}$ " m. d. 99.	Screw mch., No. 2G--B. & S. auto. 375.
Hammer, No. 4A high speed.. 135.	Shaper, 13" S. & M. vise..... 110.
Lathe, 16"x8' Rockford, q. c. g. 295.	Tapper, No. 2X Garvin..... 90.
New 4 Jaw Independent Lathe Chucks, 3"--\$3.50; 4"--\$4.50; 5"--\$6.50; 6"--\$8.	

FOR SALE BY

Temps Bros. Motor Co., - 802 Myrtle Ave., Brooklyn, N. Y.

ELECTRIC MOTORS.

Our motors are factory rebuilt, equal to new. One year guarantee. A. C. or D. C. Single phase, two or three phase. $\frac{1}{4}$ H. P. \$12.50, 1 H. P. \$16.00, 2 H. P. \$20.00, 3 H. P. \$27.50, 5 H. P. \$32.50. Others to 50 H. P. Also motors rewound to suit any requirements. Tell us your motor problems.

FOR SALE BY

J. Bleser Mfg. Co., - 16th & Madison St., Springfield, Illinois

Boring mill, No. 31 Lucas horiz.	Lathe, 25x10 Lehman q. c.....\$675.
Lathe, bench, new, screw cut.. 9x18	Millers, No. 3 Burke, Rockford.
bet. c., 4-j. ck. & tools, m. d. \$120.	Pipe machines, 2", 4", 6" and 8".
Lathes, Rivett bench full equip., (2).	Shapers, Smith & Mills, 16" and 12".
Lathe, Prentiss 25"x16', s. c. g.	Send us your inquiries.

FOR SALE BY

United Machinery & Supply Co., 1241 Walton Ave., St. Louis, Mo.

Boring mill, Bullard 36", m. d.	Planer, 36x36, 4 heads, m. d.
Generator, engine, a. c., 150 k. w.	Punch & shear, $\frac{1}{2}$ " in $\frac{1}{4}$ " double.
Grinder, No. 33 Abrasive, like new.	Shear, Niagara 42", power.
Hammer, Little Giant, 25 lb., m. d.	Shear, $\frac{3}{16}$ " Quickwork, m. d.
Planer, Coulter automatic.	Wheel press, 50 ton m. d.

FOR SALE BY

Segal Machinery Co., - 809 W. Lake St., Chicago, Ill.

Chain hoists, all sizes, reasonable.	Press, No. 8, o. b. i., flywh., 24" st. \$325.
Drill press, 24" Foote-B. h. d. \$125.	Shaper, 18" Lodge & Davis.... 75.
Lathe, 14"x6' Hendey, q. c. g., t. a. 150.	Shaper, 24" Gould & E., b. g. 150.
Lathe, 18"x8' Hendey, q. c. g., t. a. 250.	Spot welder, Toledo, 2pc. $\frac{1}{2}$ "... 165.
Lathe, 18"x8' Mueller, q. c. g., 2c. 350.	Square shear, 10' Kutscheid... 225.
Planer, 24x24x6 Gray..... 225.	Wire cut. & straight'r, $\frac{1}{4}$ " cap. 125.

New lathe chucks—geared scroll Universal and Independent.

USED AND REBUILT MACHINERY

FOR SALE BY

Joseph Hyman & Sons - 2600 E. Tioga St., Philadelphia, Pa.

Stamping Press Specialists. 1200 Presses In Stock.

- No. 703 Bliss flat edge trimmer.
 No. 23-D Bliss, gap frame, double crank, flywheel, weight 13,000 lbs.
 No. 307 Bliss, single crank, double geared, weight 28,500 lbs.
 No. 6-F Bliss, dbl. crank, geared, tie rod, 84" bet. uprights, weight 36,000 lbs.
 No. 6-F Bliss, double crank, geared, 54" between uprights, weight 28,000 lbs.
 No. 14-F Toledo, side flywheel horning, weight 6,000 lbs.
 No. 202-C Toledo, gap frame double crank, geared, weight 7,500 lbs.
 No. 94-F Toledo, dbl. crank, grd., 72" between uprights, weight 36,000 lbs.
 Shear, No. 196 Stoll, 8' 16 gauge capacity, underdriven, grd., weight 5200 lbs.

FOR SALE BY

Miles Machinery Co.,

Saginaw, W. S., Mich.

SHAPERS

- 20" & 24" Gould & Eberhardt.
 15" & 24" Potter & Johnston.
 14" & 20" Steptoe.
 16" & 20" Milwaukee.

- 16" Kelly.
 18" Sterling.
 28" Columbia.
 36" Morton draw cut.

MILLERS

- Nos. 2, 3 & 4 Cincinnati.
 Nos. 1A, AS, 2B & 3 B Milwaukee.
 Nos. 1A, 2, 2B & 3 Brown & Sharpe.
 Nos. 1A, 2 & 2A Rockford.
 No. 3 Kempsmith.

- No. 1 Cleveland universal.
 No. 2A Brown & Sharpe universal.
 No. 25 Ohio universal.
 No. 2A LeBlond universal.
 No. 3 Brown & Sharpe universal.

LATHES

- 12"x6" Hendey.
 14"x6" LeBlond.
 15"x10" Carroll-Jamieson.
 16"x6" Monarch.

- 16"x 8" Lodge & Shipley.
 18"x 8" Whitcomb Blaisdell.
 19"x10" Sidney.
 20"x 8" Lodge & Shipley.

PRESSES

- Nos. 3 & 5 Toledo, o. b. i.
 No. 6 Adriance, o. b. i.

- No. 5 Niagara, o. b. i.
 No. 2A V. & O., o. b. i.

1200 Tools In Stock. Get Our List.

FOR SALE BY

Norton-Broadway Mch. Co., Sixth & Baymiller Sts., Cincinnati, O.

BORING MILLS.

- 3A" Lucas horizontal, A 1 shape.

- 24" and 36" Bullard New Era.

DRILLS AND RADIALS

- 6' American, single pulley.
 4' Morris & American.

- No. 5 Fox multiple spindle, 32x45".
 24" Barnes camel back.

LATHES.

- 60"x70"x16" New Haven, raised, \$875.
 30"x14" Prentice.
 24"x12" American.

- 21"x12" Sidney.
 30"x20" American, geared head.

PLANERS AND SHAPERS.

- 32"x12" Detrick & Harvey openside.
 48"x10" Belmer, 4 heads, \$775.
 56"x42"x8" Gray widened, \$500.

- 24" Gould & Eberhardt, shaper, \$400.
 24" Potter & Johnston, \$800.

MISCELLANEOUS.

- Pipe machine, 12" Curtis.
 Presses, No. 166 Consolidated, No. 164 Toledo.
 Rolls, 6"x8".
 Rolls, 12"x8" Niles.
 Slotter, 26" Dill, motor drive.

- Shears, 8x3/16" Ohl.
 Shear, 72" Hillis & Jones, cap. gap, with motor.
 Shears, 60"x4" Williams-White.
 Shears, 10" Streine, 14 gauge.
 Turret lathe, 6" Gisholt.

More than 300 other Lathes, Planers, Milling Machines, Shapers, Drills, Brakes, Boring Mills and other Machine Tools in stock.

Tell us what you need or what you have for sale.

USED AND REBUILT MACHINERY

FOR SALE BY

Marr-Galbreath Machinery Co.,

58 Water St., Pittsburgh, Pa.

Air compressor, 10x10" Chgo., n.s.b.
Air comp., 1050 cu. ft. Syn. m. d.
Air receiver, 48"x10' for 150 lb.
Air receivers, 4"x18", 150 lb., (14).
Angle roll, No. 3 Niagara, 14x3/16".
Auto. lathes, 14" Fay, belt and m. d.
Barrel, 19"x24", tile lined, b. d.
Beading machine, No. 100 Niagara.
Bender, hand, 3/16"x1" Wallace.
Bender & straight'r, cap. 12" beams.
Bolt cutter, 1/2" Geometric, m. d.
Boring mill, 30" King; and Bullard.
Boring mill, 34" Colburn.
Boring mill, horizontal 3" bar, b. m.
Brake, 8"x10 ga. Chicago, pan, m. d.
Brake, 52"x18 ga., P. S. & W., hand.
Brake, 6" D. & K., 16 ga. hand.
Brake 10' Keene toggle, 16 gauge.
Brakes, hd, 10' for 18 ga. Robinson.
Broaching mch., Nos. 1 & 3 La Pointe
Chuck, Walker magnetic, 6" diam
Cold header, 1/2" W-F., solid die.
Crimping roll, 6 1/2" Robinson, 16 ga.
Drill, elect, 1/2" U. S., 110 v. Univ.
Drills, multiple 10 and 20 spindle.
Drill, 20" Barnes, camel back.
Drill, 24" Rockford, g. f. taper att.
Drill, 25" Snyder, s. h. b. g.
Drill, radial, 5' Western, g. b., m. d.
Drill, radial, 3' Dreses.
Drill, sensitive radial, 3' Amer. t. a.
Exhauster, with 1 1/2 h. p. motor, 1/60.
Forging mchs., 1 1/2", 3" & 3 1/2" (steel).
Gear hobbors, No. 1 Adams "Farw."
Gear and pinion cutter, No. 3 Sloan.
Grinder, No. 14 Landis universal.
Grinder, No. 1 LaSalle surface.
Grinder, 18-D. Rowbottom, o. h. b. b.
Hack saw, 6x6" Marvel, motordrive.
Hack saw, 8x8" Racine, belt.
Hack saw, 9x9" Peerless, m. d.
Hack saw, Racine Jr. for m. d.
Hack saw, Peerless, 6" univ. shaping
Hammer, 50 lb. Kane & Roach, pwr.
Ham., 400 lb. No. 10 Beaud., pwr. b. d.
Hammer, 800 lb. Erie stm. forg., s. f.
Hammer, 1000 lb. Chbg., steam drop.
Hoists, chain, 1 to 8-tons capacity.
Keyseaters, No. 2 Baker.
Lathe, Sundstrand 7" Mfg. type.
Lathes, 14"x6' Champion, q. c. g., tur.
Lathe, 14"x6' Hendey, m. d., t. a.
Lathe, 16"x6' Monarch, q. c. g.
Lathe, 16"x8' Hendey, tiebar, quick
change gear, taper attach.
Lathe, 14"x8' W.-B., q. c. g.
Lathe, 18"x8' L. & S. sel. hd. s. p. d. t. a.
Lathe, 19"x10' LeBlond, q. c. g., t. a.
Lathe, 20"x12' Monarch, q. c. g., t. a.
Lathe, 22"x10' 10" Greaves-K., q. c. g.
Lathe, 24"x8' Hendey, t. a. (99% new)
Lathe, 24"x12' Pgh., q. c. g., chuck.
Lathe, 26"x15' G-K. for motor.

Lathe, 27"x16' Pgh., t. a., chuck.
Lathe, 30x15' Lehman, gd. hd.
Lathe, 32"x16' Pgh., q. c. g., chuck.
Lathe, 48"x26' geared head, m. d.
Miller, No. 28 Ohio pl. auto. feeds.
Millers, pl. No. 3 B. & S., LeBlond.
Miller, universal No. 4 B. & S.
Miller, vert., Becker, Nos. 3 & 5-B.
Miller, auto. No. 2-M P. & J., s. p. d.
Motor, 25 h. p. slip rg., 3/60/220/1160.
Pipe benders, 2" Chgo & Wallace.
Pipe mche., 10" EC & B., 6" Oster.
Planer, 30"x10' W. & P., 2-heads.
Press, 42-h.p. Toledo, horn, plain.
Press, 76-D Pexto, d. c., 10,000 lbs.
Press, No. 14 Toledo horn.
Press, s. s., s. c., b. g., 3 1/2" st., 7000 lbs.
Press, s. s., d. c., b. g., 3" st., 11000 lbs.
Presses, Nos. 3 & 4 Bliss, punch type.
Press, No. 19, Bliss o. b. i.
Press, o. b. i. No. 3 Niagara, 1 1/2" str.
Presses, foot, No. 87 Bliss, pendulum.
Press, No. 6 Perkins, s. s., 4000 lbs.
Presses, No. 87 Niagara, screw.
Punches, s. e. 36", 48", 60", 72" thts.
Punch, s. e., Badger, 7" thrt., 1 1/2"x1 1/2".
Punch, Rapid, 20" tht., 1" x 1 1/2", m. d.
Punch, No. 3 L. & A. 24" thrt.,
arch. jaw, with dies.
Punch & shear, d. e., 9-A., Beloit.
Punch & shear, d. e. 16" thts.; 1 1/2"x1"
with angle & bar shear blades, m. d.
Punch & stake riveter, No. 123-C.
Toledo boilermakers.
Riveters, 3-A, 5 1/2" B, high speed.
Rolls, bending, 12' x 1 1/2" Bertsch, d. e.
Rolls, bend'g, 10' x 5/16" Bertsch, d. e.
Rolls, bend'g, 6' x 3/16" Bertsch, d. e.
Rolls, bend'g, 5' x 5/16" Bertsch, d. e.
Rolls, 30' x 1 1/2", 3 1/2" x 3".
Screw machine, No. 0G B. & S.
Shaper, 7" Rhodes, vert. ram, m. d.
Shaper, 20" G. & E., b. g., vise.
Shaper, 24" G. & E., gear box, s. p. d.
Shaper, 25" S. & M., b. g., crk., A-1.
Shear, 42"x1 1/2" Niagara, 18" gap.
Shears, 1 1/2" & 3" Lennox, throatless.
Shears, alligator, 1 1/2", 2", 2 1/2" & 3".
Shear, alligator, No. 2 Badger, 2".
Shear, rotary, 12" thrt., cap. 10 ga.
Shear, rotary, No. 308 Niagara,
circle attachment.
Shear, rotary, 16 ga., Yoder, 24" thr.
Shear, squaring, 8"x14 ga. power.
Shear, 10' x 16 ga. Ohl power.
Slotter, 15" Dill, for motor drive.
Stencil cutter, Bradley.
Tappers, No. 2 Garyin, vertical.
Tube cutter, Fox 2 1/2" cap.
Turret lathe, 28" Gisholt, 9 1/2" h. s.
Turret lathe, 26"x7 1/2" h. s., Libby
Wheel press, 60-ton W. S., 34"x5 1/2".

USED AND REBUILT MACHINERY

FOR SALE BY

The Geo. H. Bowman Company, 308 Euclid Ave., Cleveland, Ohio

Drill presses, Mueller radial.
Press, No. 2 Consolidated.
Press, No. 3 Consolidated.
Press, No. 24-A Cleveland horning.
Press, No. 64 Consolidated.

Press, No. 92 Toledo.
Press No. 40 Michigan.
Press, No. 54-A. Bliss.
Press, No. 406 toggle draw Bliss.
Press, No. 202 Toledo.

FOR SALE BY

M. A. Wertman Machinery Co., 427 Penton Bldg., Cleveland, Ohio

Brake, Ohi 8'x10 ga., press type, good as new.
Drill, Allen No. 2, 4-spindle, automatic feed to each spindle, fine condition.
Grinder, Landis 6"x18", self contained, A1 condition.
Header, Manville No. 4, s. d. d. s., very best condition.
Header, Manville No. 2, s. d. d. s., excellent machines, (2).
Pinion cutter, Sloan & Chace Automatic No. 1, capacity 1" gears or pinions.
Sprue cutter, No. 5 Coleman, 12" throat, 1"x1½" capacity, nearly new.

FOR SALE BY

Midwest Equipment Co., - 628-30 W. Lake St., Chicago, Ill.

Die filer, No. 2 Cochrane & Bly, floor type, like new,.....\$ 70.
Drill press, 2 spindle Allen, 7" overhang, ball bearing..... 150.
Drill press, No. 2 Avey, 4 spindle, 18" overhang, 99% new..... 400.
Gear hobber, No. 3 Barber Coleman, with arbor and gears..... 250.
Grinder, surface No. 2 B. & S. with magnetic chuck, generator..... 310.
Milling machine, No. 2 Cincinnati Universal, complete with dividing head with power feed, tail stock, vise and arbors..... 450.
Milling machine, No. 2 Rockford, universal, with dividing head, vise arbors and gears..... 650.
Press, No. 4 Walah o. b. i. with bolster plate..... 265.
Radial drill, 30" Fostedick, single pulley drive..... 350.
Shaper, 16" Rockford, double back geared, vise..... 225.
Shaper, 14" G. & E., double back geared, vise..... 190.
Shear, power square, 50" Excelsior, 10 ga., 15" gap, like new..... 300.
Welder, spot, brand new, 5 k. w. \$95.; 10 k. w. 150.
Planers, Lathes, Screw Machines, Air Compressors, Woodworking Machines.

FOR SALE BY

McDonald Machinery Co.,

Bolt mchs., Landis & Acme 1½".
Boring mill, Lucas & Bulhor. & vert.
Brake, D. & K. 6' 10 gauge, power.
Drills, Moline, 32-sp. hole hog.
Drills, Cin-Bickford 3' & 3½' radials.
Gear hobber, G. & E. 24".
Grinders, B. & S. No. 2 surf. & univ.
Keyseaters, M. & M. No. 2; Davis No. 1
Lathes, Hendey 14"x6"; Lehman 18"x9, Amer. 22"x10' q. c. g. grd. hd.; 50 others in all sizes & styles.
Milling machines, Becker No. 3, B. & S. No. 5, Knight No. 1, all vertical.
Milling machines, Van Norman No. 2 duplex; B. & S. No. 1; Cinc. No. 1; Hendey No. 1-B, Kemp. No. 3; Ohio No. 29 all universal;

1535 N. Broadway, St. Louis, Mo.

No. 3, Kemp. No. 1, LeBlond No. 3-H.; B. & S. No. 3-B, s. p. d., all plain.
Cleveland No. 2 s. p. d. B. & S.
Pipe mchs., Curtis, B. & K. 12" m. d.
Punch presses, Bliss No. 20; Swaine Nos. 33 & 35; Federal No. 1, 2, 3 & 4, all o. b. i.
Screw machines, Woods No. 2 tilting turret, Milholland No. 4 and Foster No. 7. b. g. hand.
Shapers, Cincinnati 32" heavy duty m. d. G. & E., S. & M., Cin., Ohio 16" b. g., Cin. 20", G. & E., Steptoe, Cin., S. & M., 24" b. g.; Ohio, S. & M. 26" b. g.
Square shears, Niag. 62" 18 ga., pwr.
Turret lathes, W. & S. No. 2A univ.

USED AND REBUILT MACHINERY

FOR SALE BY

West Penn Machinery Company

1208 House Building.

Pittsburgh, Pa.

Automatic, No. 0 Brown & S. b. d.
Auto. "C" Gridley, 7" & 1 1/2", m. d.
Air compressors, 30 to 2500 cu. ft.
Bender, pipe, No. 6-C Wallace, m. d.
Blower, Spencer turbine, 1800 c. f.
Bolt cutter, 1" Landis, 3 hds., m. d.
Bolt cutter, 1 1/2" Landis, dbl. head.
Bolt cutter, 2 1/2" Acme, sgl. hd. m. d.
Bor. mill, 48" Bullard Maxi. 2 hds.
Boring mill, 72" Pond, 2 hds., b. d.
Boring mill, 96" Pond, 2 hds. m. d.
Boring mill, 16'-24" Niles, 2 hds. b. d.
Boring mill, floor type, 4" Bement.
Brake, 5' press type, 10 gauge.
Brake, 6' D. & K. 10 ga. box & pan.
Brake, 8' D. & K. 10 ga. box & pan.
Brake, 10' Drais & K. 8", m. d.
Bulldozers, Nos. 2, 4, 6, 28, 29 & 30.
Cranes, Electric Traveling.
Die threader, Smalley General, dies.
Dieing mches., 25 & 50 ton H. & W.
Die sinker, No. E-3 Keller, m. d.
Drill, bench, 12" Buffalo, a. c., m. d.
Drill, h.s. 14" Canedy-O., 1750 r.p.m.
Drill, 21" Rockford, tap. att. m. d.
Drill, radial, 2 1/2" Fosdick, t. a., b. d.
Drill, radial, 3 1/2" Cin.-Bickford, s.p.d.
Drill, radial, 4' Prentice, t. a., b. d.
Drill, radial, 6' Dreeses, s. p. d.
Flanger, McCabe, 4" capacity, dies.
Gear cutters, 11", 24" & 36" Gleason.
Gear cutter, spur, 36" x 10" Newark.
Gear hobber, No. 4 Sch. & Sch. 118".
Gear planer, 20-ft. Gleason, m. d.
Grinder, centerless, No. 2 Cincinnati.
Grinder, centerless, No. 4-C Detroit.
Grinder, internal, No. 70 Heald.
Grinder, rad., 14" M. & D., m. d.
Grinder, surface, No. 16 Blanchard.
Grinder, surface, 14" Arter.
Grinder, surface, No. 2 Reid, b. d.
Grinder, tool & cut., No. 2 Walker.
Hammer, Blacker, power, 35-lbs.
Hammer, 80-lb. Bradley, cush. helve.
Hammer, 200-lb. Bradley, cush. helve.
Hammer, 200-lb. Bradley, compact.
Hammers, Nos. 3-B, 4-B, 4-N Nazel.
Hammers, steam, 600 lb. to 6000 lbs.
Header, No. 2 Wat. Far., o.d., tr. st.
Jacks, 35-ton Barrett, ball bearing.
Keyseater, No. 0 & 3 Baker.
Lathe, 13" x 6" South Bend, q. c. g.
Lathe, 16" x 6" LeBlond, q. c. g., d. b. g.
Lathe, 20" x 8" Hendey, tie bar, t. a.
Lathe, 24" x 16" Bridgeford, g. hd. m. d.
Lathe, 48" x 26" Bridgeford, g. hd. m. d.
Lathe, turret, 10" 6 Warner & S.
Lathe, turret, 18" Libby, m. d.
Lathe, turret, 24" Steible, 6 1/2" hole.
Lathe, tur., 28" Gisholt, 8" hole, m. d.
Lysholm tables, 72" x 30".
Miller, plain, No. 2-A Milwaukee.
Miller, thread, No. 5 Lees Bradner.

Miller, universal, No. 3 LeBlond.
Miller, vertical, No. 2 Cincinnati.
Nut tapper, 6-spindle Acme, 2".
Pipe machine, 2" Landis.
Pipe mchs., 8" Oster, 8" Williams.
Planer, 30" x 30" x 10' Woodward & P.
Planer, 48" x 48" x 18' Cinti., belt drive.
Planer, o. s., 36" x 36" x 16' D. & H.
Planer, o. s., 48" x 48" x 16' D. & H. m. d.
Planer, rotary, 48" Niles, m. d.
Presses, arbor, No. 17 Greenerd.
Press, o. b. i. Ferracute CI, 3" stroke.
Press, o. b. i., No. 5 Rockford, 8500 lb.
Press, hydraulic, 1,000 ton United.
Press, hyd. 100-ton Watson-Stillman.
Press, s. s., 13" x 19 1/2", 2" stroke.
Press, No. 78 B Bliss, t. r. 10" str.
Press, No. 92 B Toledo, d. c. 2 1/2" str.
Press, No. 96-A Toledo, d. c. 5" str.
Press, screw, No. 87 Niagara.
Press, wheel, 150-ton Schaffer.
Punch, beam, No. 6 Hilles & Jones.
Punch, hor., Cleveland, 1" thru 1".
Punch, hand, Shatz, bar and angle.
Punch & sh. No. 6 L. & A. 1/2" thru 1".
Punch, multiple, No. 6 H. & J. 10".
Riveters, air, hammer, spinning.
Rolls, bending 7" x 8" Cleveland.
Rolls, bend., 8" x 1 1/2" Bertsch, d. e., b. d.
Rolls, bending, 12" x 1 1/2" H. & J. d. e.
Roller, thread, Nos. 40 & 50 W. - F.
Sand blast, Pangborn, 99", ER-1.
Saw, band, metal No. 2 Klem, m. d.
Saw, cold, 48" Newton, m. d.
Saw, friction, Nos. 2 & 3 Ryerson.
Saw, hack, No. 5 Marvel, b. d.
Saw, hack, 12" Peerless, m. d.
Shapers, 16", 20", 24" & 36" G. & E.
Shear, angle, 6" x 6" x 1" H. & J.
Shears, alligator, 18", 2", 3" & 4".
Shear, bevel, Lennox 1/2".
Shear, circle, No. 208-A Niagara.
Shear, No. 1 Gray, 3/16", 34" gap.
Shear, gang splitter, No. 235-A Bliss.
Shear, Cleveland "W" 3" capacity.
Shear, guil. No. 5 H. & J. 4" sq., m. d.
Shear, rotary, 1/2" Ryerson.
Shear, 36" x 16 ga. Pexto, foot.
Shear, squaring 8" x 14 ga. Ohl.
Shear, sq. 10" x 10 ga. Kutscheid, m. d.
Shear, 54" x 1 1/2" Garrison, 24" gap.
Shear, 12" x 1 1/2" Wheeling, 31" gap.
Slotter, 18" Dill, motor drive.
Straightener, 60" Nat. 14 ga. 17 rolls.
Straight'r, 48" United, 16 ga. 13 rolls.
Straightener, 1 1/2" round Abramson.
Straightener, 4" round Abramson.
Swaging mche., No. 5-A Standard.
Testing mche., Brinnell hardness.
Tumbling barrel, 18" x 36", b. d.
Upsetters, 1" to 6".
Welders, spot and butt.

USED AND REBUILT MACHINERY

FOR SALE BY

Wigglesworth Machinery Company

199 Bent Street, Cambridge, Mass.
 Automatics, No. 00 B. & S...\$250.00
 Boring mill, No. 0 G. & L.
 Hammer, 300 lb. Standard auto.
 Lathe, 18"x20"x20" L. & S.
 Lathe, 19"x30"x8" LeBlond, gap.
 Miller, 6"x18" P. & W. thread.
 Miller, No. 2 LeB. hvy. univ., m. d.
 Miller, 48"x24"x10" Ingersoll.
 Planer, 30"x30"x8" Clev. openside.
 Press, No. 3A Bliss.

FOR SALE BY

Mid-West Machine Tool & Supply Co., Davenport, Iowa

Automatics, Nos. 0 & 00 B. & S.
 Gear generator, 3" Waltham bevel.
 Grinder, 10"x36" Norton.
 Grinder, No. 10 B. & S. ext.
 Grinder, No. 23 Heald rotary surf.
 Hobbers, Nos. 3, 12-B & C.
 Lathe, No. 9 LeBlond multi-cut.
 Millers, Nos. 1 & 2 Brown & Sharpe.
 Radials, 3" Cincinnati Bickford.
 Turret lathe, No. 6 Warner & S.
 Partial list; send us your inquiries.

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Drill, 3-spindle Taylor & Fenn.
 Drill, 3-spindle Washburn, b. b.
 Drill, 24" Superior, b. g. & p. f.
 Grinder, Wisconsin Univ., c. & t.
 Grinder, Cincinnati plain, c. & t.
 Grinder, Ransom 20" disc, pl. tables.
 Pipe machine, Merrell 6" cap.
 Planer, American 24x24x6.
 Shaper, Ohio 20" heavy duty.
 Tapping Machine, R. & S. verticle.

FOR SALE BY

Bennett Machinery Co., 30 Church St., New York City

Electric hoist, Box 1 ton.
 Lathes, 27"x16" and 18"x8" Prentice.
 Miller, No. 1 Hendey universal.
 Miller, No. 3S Cincinnati univ.
 Miller, No. 2 B. & S. vert. att.
 Punch and shear, No. 23 Pels.
 Radial drill, 4" Cincinnati-Bickford.
 Shaper, 14" G. & E., b. g., m. d.
 Turret lathe, No. 4 W. & S. univ.

We have a large stock. Send up your inquiries.

FOR SALE BY

Interstate Machinery Co., 130-2 So. Clinton St., Chicago, Ill.

Bend'g rolls, 6 7/16" Beloit; 60" Nia.
 Brakes, all sizes—hand and power.
 Comb. punch & shear, No. 53 Beloit.
 Drills, 22" Weigel, t. a.: Avey 2 spdl.
 Press, Bliss, d. c., 60" bet. housing.
 Press, No. 5 Bliss b. g.; No. 4 plain.
 Press brake, 10' 10 ga. Ohl, m. d.
 Shapers, 7" Rhodes; 26" Stockbridge
 Shears, pwr. 10' 3/16"—62" 18 ga. Nia.
 Shear, all steel alligator, 6x4" cap.
 Welders, spot, 25 k.v.a. Thompson;
 A. E. F. 12 k.w., m. d., 25 k.w. Tol.
 Middle-west's Most Complete Stock of Sheet Metal Machinery.

FOR SALE BY

Chicago Machine Works.

Fourth Floor, 558 W. Washington Blvd., Chicago, Ill.

Air compressor, 3"x3".....\$ 10.
 Engraving mch., Gorton, comp. 225.
 Folder, 36".....5.
 Lathe, 14"x6" Reed.....35.
 Lathe, 14"x6" L. & S., q. c.....65.
 Lathe, 21"x8" Whitcomb, g. h..\$275.
 Lathe, 11"x4" Wells, comp. rest. 50.
 Miller, bench.....45.
 Press, No. 4 Amer. Can. o.b.i. 250.
 Shaper, 16" Kelly, b. g.....160.

USED AND REBUILT MACHINERY

FOR SALE BY

Brown Machinery Co., 2333 N. 9th St., St. Louis, Mo.
 Drills: 24", 26" and 32" Barnes and Rockford; 4-spindle Moline.
 Grinders: No. 6 Bealy dbl. spindle; No. 220 Badger auto. disk; 12x30" Modern, plain s. c. c. s.; No. 13 Brown & Sharpe, universal, tool.
 Hammer: 40 lb. Bradley helve.
 Lathes, 30" x 12' Blaisdell; 26" x 12' Putnam; 20" x 10' Bradford, taper attachment; 16" x 8' Lodge & Shipley; 16" x 6' Monarch; 12" and 14" Seneca Falls, q. c. g.
 Write for prices; send us your inquiries for shop equipment and sheet metal working machinery. We have the stock.

FOR SALE BY

Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.
 Miller, Ingersoll slab, 42" x 36" x 9' \$ 750.
 Planer, 24x24x8 Fitchburg, 1 head 150.
 Planer, 36" x 36" x 12' Cincinnati with 2 heads 800.
 Press, No. 1, Consolidated o. b. i. 1 1/2" stroke, 700 lbs. 80.
 Press, No. 30A Perkins o. b. i. 2" stroke, 1500 lbs. 125.
 Press, No. 3 American (R & K) o. b. i., 2 1/2" stroke 2000 lbs. 150.
 Press, No. 3, L. & J. o. b. i., 2 1/2" stroke, 2000 lbs. 200.
 Press, No. 4 Niagara o. b. i., 2" stroke, 1700 lbs. 175.
 Press, No. 5 Niagara o. b. i., 2 1/2" stroke, 2900 lbs. 250.
 Saw, No. 5 Marvel high speed 6" x 6" 100.
 Screw machine, No. 1, B. & O. plain head, 13/16" capacity 175.
 Separator, Curtis oil, 1 bushel 200.
 Separator, oil, American 1 1/2 bushel 225.
 Shaper, 30" Cincinnati, crank, back geared, vise and c/s. 400.
 Turret lathe, 24x10" Milholland, for chuck and bar work 475.
 Turret lathe, 34" x 36" Acme with chucking equipment 300.
 Turret lathe, 24" Steinle, 4" hole, side carriage 200.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 Hadley Street, St. Louis, Mo.
 Bar shear, 5" x 1 1/2".
 Boring mill, 36" Gisholt.
 Drill, 14" Mason high speed.
 Drill, 20" Champion.
 Drill, 22" Barnes, back geared.
 Drill, 24" Prentice, sliding head.
 Drill, 25" Barnes back geared.
 Drill, 28" Barnes sliding head.
 Drill, 1-spindle Avey.
 Drill, 2-spindle Leland-Gifford.
 Drill, 3-spindle Avey.
 Grinder, Wells Bros. universal.
 Grinder, 12"x60" Landis universal.
 Hammer, 60 lb. Bradley helve.
 Hammer, 600 lb. steam.
 Lathe, 18"x 8" South Bend.
 Lathe, 20"x10' Bradford.
 Lathe, 24"x12' Lodge & Shipley.
 Lathe, 24"x12' Schumacher & Boye.
 Lathe, 30"x15' Lodge & S., q. c. g.
 Lathe, 36"x15' American, q. c. g.
 Miller, No. 1 U. S. hand.
 Miller, No. 2 LeBlond universal.
 Miller, No. 2 Ohio single pulley dr.
 Miller, No. 3 Kempsmith universal.
 Miller, No. 5-B Brown & Sharpe.
 Pipe machine, 8" Williams.
 Planer, 42"x42"x26" Wheeler, 2 hds.
 Press, No. 87 Swaine straight back.
 Press, No. 1 1/2 Bliss toggle.
 Press, No. 3 Toledo.
 Press, Stiles & Parker drawing.
 Press, No. 37 Niagara str. back.
 Press, No. 24 Toledo cam drawing.
 Press, No. 723 Toledo cam drawing.
 Punch, No. 14 W. W., 12" throat.
 Punch, double end, two 20" throats, capacity 1" in 1".
 Screw machine, No. 3A Warner & S.
 Shaper, 16" Smith & Mills.
 Shaper, 32" Cincinnati.
 Shaper, 24" American-Klopp.
 Squaring shear, 8' power.
 Tapper, auto., Rickert & Schafer.

USED AND REBUILT MACHINERY

FOR SALE BY

James J. Gouse * * * **137 Oliver Street, Boston, Mass.**

Drill, 6-spindle Allen, 14", No. 2 Morse.

Grinder, 36"x12" P. & W. vertical with magnetic chuck and pump.

Press, Bliss-Cons. No. 3 inclinable.

Please note our new address. Inquiries solicited.

FOR SALE BY

The Elyria Belting & Machinery Co.,
Corner Williams and Buckeye Streets, Elyria, Ohio

Hundreds of Machines For Sale.

Air compressor, G. E. centrifugal, 1.5 pd. pressure, equip 10 h. p. motor.

Bench lathes, 9"x5' Star, 95% new, (only 20 on hand).

Boring mill, 42" Bullard vertical.

Burnishing barrel, Globe triple.

Punch & shear, Cleveland double end, arch, jaw, 7½ h. p. motor, 1" thru 1".

Write For Free Catalog.

FOR SALE BY

The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.

Automatic, 14" Cone, practically new.

Bending rolls, 10' Bertsch, ½" cap.

Bending roll, 25" H. & J. ½" cap.

Column facer, 14" Espron-Lucas.

Crane, electric travel, 15 ton a. c.

Drill, 4' Cincinnati-Bickford, radial.

Grinder, 30"x162" Landis, m. d.

Hammer, No. 6N Nazel, motor dr.

Hammer, 2000 lbs. Chambersburg.

Lathe, 30"x10' Flather, b. d., new.

Lathe, 23"x20' LeBlond, belt drive.

Lathe, 36"-60"x32" McCabe, belt.

Lathe, 60"x36" Bridgeford.

Pipe mchs. 2, 4, 6 & 12" belt & m.dr.

Punch & shear, No. ½ Buffalo comb.

Shear, 84" Newbold, ½" cap., 27" gap.

FOR SALE BY

Strafer Machinery Company,
14th and Provost St., Jersey City, N. J.

HEAVY PRESSES

Ferricut 200 ton 82" double crank.

Ferricut 70" geared double crank.

No. 77½ Bliss double back geared.

No. 59 Toledo double back geared.

No. 75½ Bliss fly wheel type.

400 ton Watson Stillman hydraulic.

MISCELLANEOUS.

Boring bars, portable, 4"x3".

Brake, Geo. Ohl, 8".

Grinder, disc No. 8 Badger, 30" b. b.

Hammer, 400 lb. Chamber. air, steam.

Keyscater, No. 5 Mitts & M. 25" str.

Pipe machine, 6" Saunders b. d.

Planer, 48"x16' Pond 4 heads.

Planer, 48"x12' D. & H. open side.

Rolls, Cleveland 10'x½ latest, m. d.

Squaring shear, 8' 14 ga. L. & N.

FOR SALE BY

The Jones Machine Tool Co., Front & Pike Sts., Cincinnati, Ohio

Grinder, 16"x72" Landis self-contained, b. b., crank shaft..... \$ 600.

Grinder, 8"x36" No. 12 Brown & Sharpe plain cylindrical..... 225.

Grinder, No. 2 Wilmarth & Morman surface..... 300.

Grinder, No. 1½ Walker surface, capacity 6"x18"..... 250.

Grinder, No. 1 Diamond surface, capacity 12"x24", motor drive..... 450.

Grinder, tool cutter and drill, No. 9 Wilmarth & Morman..... 95.

Grinder, tool and cutter, No. 1 Cincinnati universal..... 125.

Grinder, tool and cutter, No. 1½ Cincinnati universal..... 250.

Grinder, tool and cutter, No. 1 Sterling plain, b. b. spindle..... 75.

Lathe, 36"x14' Bradford, standard change gear and countershaft..... 350.

Shaper, 24" Barker crank, cone drive and countershaft..... 150.

USED AND REBUILT MACHINERY

FOR SALE BY

Wm. Carroll & Son, 1776 Lexington Ave. (Norwood) Cincinnati, O.
Manufacturers of Dividing Heads.

Surplus Machine Tools in fine condition:

Lathe, LeBlond, 16"x6" draw-in and taper attachment, q. c. g. cone type.
Miller, B. & S. No. 2 plain, cone type, dividing head, vise and arbor.
Shaper, Gould-Eberhardt, 16" high duty, cone type.
No. 14 B. & S. Triple Index Centers, also several used dividing heads.

FOR SALE BY

L. F. Seyfert's Sons, Inc., (Monarch Machinery Co. Div.)
437-39 North Third Street, Philadelphia, Pa.

Arbor presses, Nos. 3, 3½, 4 & 8 Greenerd; No. 3 Barnes screw press.
Drill presses, ball bearing Allen, Sipps, Edlund; 1 to 6 spindles.
Lathes, 7" Bench to 36"; some motor driven.
Milling machines, No. 0 Rockford; No. 2M Cincinnati.
Planers, 24"x24"x6' to 48"x48"x20' belt and motor drives.

FOR SALE BY

Brownell Machinery Co., 150 Pine St., Providence, R. I.

Boring mill, No. 32 Lucas horizontal, motor drive.
Boring mill, 36" Bullard New Era vertical.
Drill, radial 3½ ft. American.
Gear cutter, No. 13 Brown & Sharpe.
Hack saw, 6"x6" Peerless.
Milling machine, No. 3 Cincinnati vertical, m. d.
Shaper, 20" Cincinnati, m. d.

FOR SALE BY

The E. L. Essley Machinery Co.
Telephone Lincoln 6320 825-845 Rees St., Chicago

Brake, 8', No. 18 gauge, Robinson.	Press, No. 7-A Niagara.
Press brake, 10' No. 10 gauge Ohl.	Riveters, Nos. 3A, 4A & 5A Hi. Spd.
Presses, No. 165-B Consolidated grd.	Shears, 10' 3/16" cap. Niagara m. d.
Presses, Nos. 19 and 21½ Bliss.	Shears, 11' No. 14 gauge Niagara.
Presses, No. 5 Toledo, o. b. i.	Shear, 52" No. 16 gauge Niagara ft.

FOR SALE BY

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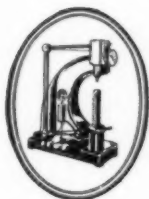
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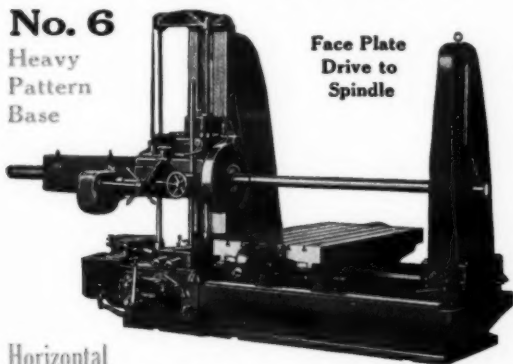
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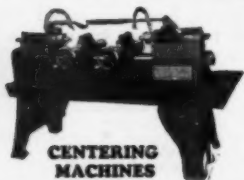
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